

**What is claimed is:**

1           1.    A system, comprising:

2                   a first voltage regulator having a supply input  
3   coupled to a first supply voltage, an enable input and a  
4   supply output, the first voltage regulator selectively  
5   providing at the supply output up to a first predetermined  
6   current level at a regulated voltage based upon the first  
7   supply voltage when enabled and providing substantially no  
8   current when disabled;

9                   compare circuitry having an input coupled to a  
10   first supply voltage and an output coupled to the enable  
11   input of the first voltage regulator and having a value  
12   indicative of whether the first supply voltage is greater  
13   than a predetermined voltage level; and

14                   circuitry having a supply input coupled to the  
15   supply output of the first voltage regulator.

1           2.    The system of claim 1, further comprising a second  
2   voltage regulator having a supply input coupled to a second  
3   supply voltage when enabled and a supply output, the second  
4   voltage regulator selectively providing at the supply output

5    thereof up to a second predetermined current level at a  
6    regulated voltage based upon the second supply voltage, the  
7    supply output of the first voltage regulator being coupled  
8    to the supply output of the second voltage regulator.

1            3.    The system of claim 2, wherein the supply input of  
2    the first voltage regulator is coupled to the supply input  
3    of the second voltage regulator.

1            4.    The system of claim 2, wherein the supply input of  
2    the first voltage regulator and the supply input of the  
3    second voltage regulator are coupled to an external power  
4    supply.

1            5.    The system of claim 4, wherein the supply input of  
2    the second voltage regulator is coupled to the external power  
3    supply and a battery.

1            6.    The system of claim 2, wherein the regulated  
2    voltage provided by the second voltage regulator is less than

3 the regulated voltage provided by the first voltage  
4 regulator.

1 7. The system of claim 1, wherein the first voltage  
2 regulator comprises a first transistor having a first  
3 conduction terminal coupled to the supply input thereof, a  
4 second conduction terminal coupled to the supply output of  
5 the first voltage regulator and a control terminal, the  
6 transistor providing to the supply output of the first  
7 voltage regulator the first predetermined current level.

1 8. The system of claim 7, further comprising biasing  
2 circuitry coupled to a control terminal of the first  
3 transistor, wherein the first transistor operates in a  
4 saturation mode of operation when enabled.

1 9. The system of claim 7, wherein the first voltage  
2 regulator further comprises a second transistor having a  
3 first conduction terminal coupled to the supply input of the  
4 first voltage regulator, a control terminal coupled to the

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5 output of the compare circuitry and a second conduction  
6 terminal coupled to the control terminal of the first  
7 transistor

1 10. The system of claim 1, further comprising a  
2 transistor having a first conduction terminal coupled to a  
3 battery, a second conduction terminal coupled to the supply  
4 input of the circuitry and a control terminal coupled to the  
5 output of the compare circuitry.

1 11. The system of claim 1, wherein the circuitry  
2 comprises a volatile memory.

1        12. A method for providing a supply voltage to a  
2 circuit, comprising:  
3            receiving a first supply voltage;  
4            comparing the first supply voltage to a  
5 predetermined voltage level; and  
6            selectively enabling a regulator circuit based upon  
7 the comparison, the regulator circuit providing up to a first  
8 predetermined current level at a first regulated voltage to  
9 the circuit when enabled, the first regulated voltage being  
10 based upon the first supply voltage.

1        13. The method of claim 12, further comprising  
2 selectively coupling a battery to the circuit based upon the  
3 comparison.

1        14. The method of claim 13, further comprising  
2 regulating the voltage provided by the battery to generate  
3 a second regulated voltage, and supplying the second  
4 regulated voltage to the circuit.

1           15. The method of claim 14, wherein the second  
2 regulated voltage is less than the first regulated voltage.

1           16. A device, comprising:  
2           a first voltage regulator having a supply input,  
3 an enable input and a supply output, the first voltage  
4 regulator receiving a supply voltage at the supply input and  
5 providing at the supply output a regulated voltage at up to  
6 a first predetermined current level when enabled and  
7 providing substantially no current when disabled.

1           17. The device of claim 16, wherein the first regulator  
2 comprises a first transistor having a first conduction  
3 terminal coupled to the supply input thereof, a second  
4 conduction terminal coupled to the supply output of the first  
5 voltage regulator and a control terminal, the transistor  
6 providing to the supply output of the first voltage regulator  
7 up to the first predetermined current level.

1           18. The device of claim 17, further comprising biasing  
2 circuitry coupled to the control terminal of the first

3 transistor for providing a predetermined biased voltage  
4 thereto, wherein the first transistor operates in a  
5 saturation mode of operation when activated.

1 19. The device of claim 17, wherein the first voltage  
2 regulator further comprises a second transistor having a  
3 first conduction terminal coupled to the supply input of the  
4 first voltage regulator, a control terminal coupled to the  
5 enable input and a second conduction terminal coupled to the  
6 control terminal of the first transistor.

1 20. The device of claim 16, further comprising a second  
2 voltage regulator having a supply input and a supply output,  
3 the second voltage regulator selectively providing at the  
4 supply output thereof up to a second predetermined current  
5 level at a regulated voltage, the supply output of the first  
6 voltage regulator being coupled to the supply output of the  
7 second voltage regulator.

1           21. The device of claim 20, wherein the supply input  
2           of the first voltage regulator is coupled to the supply input  
3           of the second voltage regulator.

1           22. The device of claim 20, wherein the supply input  
2           of the first voltage regulator and the supply input of the  
3           second voltage regulator are coupled to an external power  
4           supply.

1           23. The device of claim 20, wherein the supply input  
2           of the second voltage regulator is coupled to the external  
3           power supply and a battery.

1           24. The device of claim 20, wherein the regulated  
2           voltage provided by the second voltage regulator is less than  
3           the regulated voltage provided by the first voltage  
4           regulator.

1           25. The device of claim 16, further comprising a  
2           compare circuit having an input adapted to be coupled to a  
3           voltage supply, for generating a signal at an output of the



4 compare circuit having a value indicative of the voltage  
5 appearing at the input being greater than a predetermined  
6 reference voltage, the output of the compare circuit being  
7 coupled to the enable input of the first voltage regulator.

1 26. The device of claim 25, further comprising a  
2 transistor having a first conduction terminal coupled adapted  
3 to be coupled to a battery, a second conduction terminal  
4 coupled to the output of the first voltage regulator and a  
5 control terminal coupled to the output of the compare  
6 circuit.

1 27. The device of claim 16, further comprising a  
2 volatile memory having a supply input coupled to the output  
3 of the first voltage regulator.